UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,533	09/10/2003	Rene-Jeroen Verschuur	2001-1289	1956

466 7590 11/14/2006

YOUNG & THOMPSON
745 SOUTH 23RD STREET
2ND FLOOR
ARLINGTON, VA 22202

EXAMINER	
SONG, MATTHEW J	
ART UNIT	**PAPER NUMBER**
1722	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,533	VERSCHUUR ET AL.	
	Examiner	Art Unit	
	Matthew J. Song	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ernsting (US 4,883,681).

In a method of crystallization, note entire reference, Ernsting teaches by passing an aqueous phase solution through a heat exchanger (Abstract). Ernsting also teaches a rework line **21** used on a portion of the material received using pump (col 11, ln 20-60 and col 12, ln 15-30). Ernsting also teaches crystallization is slow and if the emulsion is cooled down in a relatively short period of time, then the dispersion leaving the heat exchanger is usually in an undercooled state, i.e. the solid fat content is less the equilibrium content at that temperature (col 4, ln 65 to

col 5, ln 20). Ernsting teaches the heat exchanger cools the emulsion (col 5, ln 1-25; col 10, ln 50-65 and col 11, ln 50-67), this clearly suggests maintaining cooling conditions in the heat exchanger.

Ernsting does not teach the under cooling at the outlet temperature is the equilibrium temperature minus 0.5-0.9 times the metastable region.

Tempeature is taught by Ernsting to be a result effective variable and temperature is also well known in the art to be a result effective variable. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ernsting by optimizing the outlet temperature to obtain the claimed outlet temperature by conducting routine experimentation. (MPEP 2144.05).

Referring to claim 2, Ernsting does not teach a filter or separator.

Referring to claims 3 and 6, Ernsting teaches a scraped surface heat exchanger (col 6, ln 1-10). Ernsting does not teach the claimed dimensions. Changes in size are held to be obvious (MPEP 2144.04). Adjsting the dimensions of the apparatus to obtain a desired flow and residence time would be within the skill of an ordinary person in the art at the time of the invention.

Referring to claim 4, Ernsting does not teach the claimed heat flux. Heat flux can be determined by conducting routine experimentation to obtain a desired cooling effect. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ernsting by optimizing the heat flux to obtain the claimed heat flux by conducting routine experimentation. (MPEP 2144.05).

Referring to claims 5,7 and 9, Ernsting does not teach the claimed flow rate. Flow rate is known in the art to be a result effective variable. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ernsting by optimizing the flow rate to obtain the claimed flow by conducting routine experimentation because flow rate affects the residence time. (MPEP 2144.05)

Referring to claim 8, Ernsting does not teach the claimed concentration. Concentration is well known in the art to be a result effective variable. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ernsting by optimizing the concentration to obtain the claimed concentration by conducting routine experimentation. (MPEP 2144.05).

3. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ernsting (US 4,883,681) in view of Volker (US 2001/0025015 A1).

Ernsting teaches all of the limitations of claim 10, as discussed previously, except a pistion or screw heat exchanger.

In a process for crystallization, note entire reference, Volker et al teaches a crystallization step can be conducted in such equipment as a swept-wall, scraped wall, or screw type heat exchanger or equivalent, scraped wall agitated reactos, plate and frame heat exchangers, and tube and shell heat exchangers ([0130]). Volker et al also teaches such heat exchangers generally cools a composition at a rate from 0.4°C/min to 300°C/min ([0130]). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ernsting uy using a

heat exchanger, as taught by Volker et al, because such heat exchangers are commonly used in the art to cool a composition at a desired rate to achieve crystallization.

Response to Arguments

4. Applicant's arguments filed 8/22/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., crystals of a size in the range of 100-1000 μm) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., residence time in the recirculation duct is provided for crystal growth) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., return duct is used for crystal growth) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the

claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The duct is merely claimed to supply crystal slurry.

Applicant's argument that Ernsting teaches a heat return path which is contrary to the present invention is noted but is not found persuasive. The claimed invention merely requires a recirculation duct to supply slurry to the heat exchanger and the heat exchanger is where the crystals are cooled. The claimed invention is not limited to non-heated return path. Ernsting teaches a recirculation duct **21** and a heat exchanger which undercools the slurry to produce crystals, thus meets the claimed invention (col 5, ln 1-30 and col 11, ln 50 to col 12, ln 25).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mollerstedt (US 3,599,701) teaches a crystallizer without a filter or separator (Fig 1).

Ueda et al (US 6,364,914) teaches a metastable saturation region (col 6, ln 1-15).

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Song whose telephone number is 571-272-1468. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew J Song
Examiner
Art Unit 1722

MJS
November 9, 2006

YOGENDRA N. GUPTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700